Documentation, Codebook, and Frequencies

HDL-Cholesterol

Laboratory

Survey Years:
2005 to 2006

SAS Transport File:
HDL_D.XPT

nhanes

December 2007

NHANES 2005–2006 Data Documentation

Laboratory Assessment: HDL-Cholesterol (HDL_D)

First Published: December 2007   **Last Revised:** N/A

Component Description

The data will be used to monitor the status of hyperlipidemia and the success of the National Cholesterol Education Program.

The main element of the cardiovascular disease laboratory component in NHANES is blood lipid levels. Cardiovascular disease is the leading cause of death in the United States. The data will be used to monitor the status of hyperlipidemia and the success of the National Cholesterol Education Program.

Eligible Sample

Participants aged 6 years and older were tested.

Description of Laboratory Methodology

HDL-Cholesterol is measured directly in serum. The apolipoprotein B containing lipoproteins in the specimen are reacted with a blocking reagent that renders them non-reactive with the enzymatic cholesterol reagent under conditions of the assay.

The procedure uses the Roche/Boehringer-Mannheim Diagnostics direct HDL method. The method uses sulfated alpha-cyclodextrin in the presence of $Mg+2$, which forms complexes with apoB containing lipoproteins, and polyethylene glycol-coupled cholesteryl esterase and cholesterol oxidase for the HDL-cholesterol measurement.

There was a change in the equipment from the Hitachi 717 to the Hitachi 912 during 2005-2006. The lab method was similar and the lab site was the same for HDL Cholesterol in NHANES 2003-2004. A detailed description of the laboratory method used can be found in Laboratory Procedures Manuals on the NHANES web site.

Laboratory Quality Control and Monitoring

The NHANES quality assurance and quality control (QA/QC) protocols meet the 1988 Clinical Laboratory Improvement Act mandates. Detailed quality control and quality assurance instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Read the LABDOC file for detailed QA/QC protocols. A detailed description of the QA/QC procedures can be found on the NHANES web site.

Data Processing and Editing

Blood specimens were processed, stored, and shipped to Johns Hopkins Hospital, Baltimore, MD for analysis. Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Read the LABDOC file for detailed data processing and editing protocols. The analytical methods are described in the **Description of the Laboratory Methodology** section.

One derived variable was created in this data file. The formula for its derivation is as follows:

LBDHDDSI:

> The HDL-cholesterol in mg/dL (LBXHDD) was converted to mmol/L (LBDHDDSI) by multiplying by 0.02586.

Detailed instructions on specimen collection and processing can be found on the NHANES web site.

Analytic Notes

Correction of the HDL Cholesterol Method:

The HDL was corrected for the 2005-2006 data. The method showed an unacceptable bias of -5% (bias < -4%) when compared to known HDL-cholesterol controls (Solomon Park Research Laboratories, Kirkland, WA) with assigned values established by reference methods at the Centers for Disease Control and Prevention. The CDC HDL-cholesterol reference method uses heparin-manganese to precipitate HDL and the Abell-Kendall method to measure cholesterol.

The participants' HDL-cholesterol values for HDL cholesterol method was corrected as follows:

$$\text{Corrected HDL} = \frac{(\text{Solomon Park assigned HDL value}) \times (\text{Participant HDL})}{(\text{HDL QC value associated with participant sample})}$$

A batch of participants' HDL-cholesterol values was run with Solomon Park quality controls during 2005-2006. Each participant's HDL-cholesterol was adjusted by comparing the associated Solomon Park quality control value to the assigned HDL-cholesterol value.

General Notes:

The analysis of NHANES 2005–2006 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 2005–2006 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. They also contain all survey design variables and sample weights for these age groups. The phlebotomy file includes auxiliary information such as the conditions precluding venipuncture. The household questionnaire and phlebotomy files may be linked to the laboratory data file using the unique survey participant identifier SEQN.

References   N/A

Locator Fields

Title: HDL-Cholesterol

Contact Number: 1-866-441-NCHS

Years of Content: 2005–2006

First Published: December 2007

Last Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: HDL-Cholesterol

Record Source: NHANES 2005–2006

Survey Methodology: NHANES 2005–2006 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

Medium: NHANES Web site; SAS transport files

National Health and Nutrition Examination Survey
Codebook for Data Production (2005-2006)

HDL-Cholesterol (HDL_D)
Person Level Data

December 2007

SEQN	Target
	B(6 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	Respondent sequence number

English Text: Respondent sequence number.

English Instructions:

LBDHDD	Target
	B(6 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	Direct HDL-Cholesterol (mg/dL)

English Text: Direct HDL-Cholesterol (mg/dL)

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
15 to 188	Range of Values	7360	7360	
.	Missing	726	8086	

LBDHDDSI	Target
	B(6 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	Direct HDL-Cholesterol (mmol/L)

English Text: Direct HDL-Cholesterol (mmol/L)

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
0.39 to 4.86	Range of Values	7360	7360	
.	Missing	726	8086	